



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

at noon. Let r denote the rate of the man, s the distance he walks in time t , l his latitude *assumed to be constant*, h the hour angle after noon. Then from spherical trigonometry, $\cot \phi = \sin l \cot h$ (1). But $h = \frac{\pi t}{12} = \frac{\pi s}{12r}$, hence $\cot \phi = \sin l \cot \frac{\pi s}{12r}$ (2) which is the intrinsic equation of the path of the man, latitude assumed constant.

$$\begin{aligned} \text{From this, } ds &= \frac{12r \sin l}{\pi} \frac{d\phi}{1 - \cos^2 l \sin^2 \phi} \\ x &= \int \sin \phi ds = \frac{12r \sin l}{\pi} \int \frac{\sin \phi d\phi}{1 - \cos^2 l \sin^2 \phi} = \frac{12r}{\pi \cos l} \left[\tan^{-1} \frac{\sin l \tan(\frac{\pi}{4} + \frac{\phi}{2})}{1 + \cos l} \right. \\ &\quad \left. - \tan^{-1} \frac{\sin l \tan(\frac{\pi}{4} + \frac{\phi}{2})}{1 + \cos l} - \tan^{-1} \frac{\sin l}{1 - \cos l} + \tan^{-1} \frac{\sin l}{1 + \cos l} \right] \quad (3). \quad y = \int \cos \phi d\theta \\ &= \frac{12r \sin l}{\pi} \int \frac{\cos \phi d\phi}{1 - \cos^2 l \sin^2 \phi} = \frac{6r \sin l}{\pi} \log_e \left[\frac{1 + \cos l \sin \phi}{1 - \cos l \sin \phi} \right] \quad (4). \end{aligned}$$

Since only y is desired, in (2) we let $s = 6r$, then $\phi = \frac{\pi}{2}$, whence in (4)
 $y = \frac{6r \sin l}{\pi} \log_e \cot^2 \frac{1}{2} l = \frac{12r \sin l}{\pi} \log_e \cot \frac{1}{2} l$ which is the distance traveled south in one-half day. In 3 days at 3 miles per hour $y = \frac{216 \sin l}{\pi} \log_e \cot \frac{1}{2} l$.

QUERIES AND INFORMATION.

Conducted by J. M. COLEMAN, Monterey, Va. All contributions to this department should be sent to him.

Answers to Queries in the American Mathematical Monthly for March 1894. (Vol. I. No. 3. page 102).

Continued from the May number.

IV. In the spaces called after Riemann, called by Klein *elliptic*, the whole straight line is finite.

Two such straights, having crossed, recur to the point of crossing without going through any point at infinity.

V. In Euclid's constructions, only pieces of straights occur, each piece having two given end points. Such pieces are *sects*, always finite. But as soon as, with von Staudt, we admit a point at infinity, then we have straights with two ends, yet infinite; for the whole straight is infinite, and so its half is infinite.

One of the two costraight rays from a given point to a point at infinity is always infinite.

VI. In Lobatschewsky's geometry, all coplanar copunctal straights are divided, with reference to a given coplanar straight, into *cutting* and *not-cutting*, by two boundary lines, which do not cut the given line for any finite construction, but each of which has a point at infinity in common with the given line.

VII. Lobatschewsky's parallels are therefore coplanar straights which however far they can actually be produced do not meet, yet which meet at infinity.

In Lobatchewsky's space, two straight lines perpendicular to a third never intersect, how far soever they be produced; yet they are not parallel, for they do not even have a common point at infinity, which is as much an essential of parallelism in Lobatschewsky's non-Euclidean space as in von Staudt's Euclidean space.

GEORGE BRUCE HALSTED.

Remark on Mr. Stevens' Article in April Number.

From equation (2) $\log(-1) = \pi(1+2a)\sqrt{-1}$ we have by dividing,
 $\pi = \frac{\log(-1)}{(2a+1)\sqrt{-1}}$ or making $a=0$, $\pi = \frac{\log(-1)}{\sqrt{-1}}$, a most singular result in Mathematics. This result can also be expressed in the form,

$$\pi = 2\sqrt{-1} \log \frac{1-\sqrt{-1}}{1+\sqrt{-1}}.$$

COOPER D. SCHMITT.

QUERY.—Is there on the Western Continent a copy of the work of Giordano da Bitonto: *Euclide restituito overe gli antichi elementi geometrici ristoranti*, Roma, 1680. Folio?

TRANSLATOR OF LOBATSCHESKY, GEORGE BRUCE HALSTED.

EDITORIALS.

This issue is mailed a week late.

Dr. Paul Stackel writes from the University of Halle of his interest in the **AMERICAN MATHEMATICAL MONTHLY**'s Non-Euclidean Geometry.

We shall be very grateful to our subscribers if they will aid us in doubling the number of subscribers to the **MONTHLY** during July and August.

Subscribers, we shall be pleased to send sample copies of the **MONTHLY** to any of your friends who are likely to subscribe if you will kindly give us their address.

Remember, we will send the **MONTHLY** one year to any person sending us 4 names and \$8. Send money by Post Office Money Order or by Draft to B. F. Finkel, Kidder, Missouri.

Professor David E. Smith, Ph. D., of the Michigan State Normal School, writes Dr. Halsted as follows: "I am enjoying your papers on Non-Euclidean Geometry in the **AMERICAN MATHEMATICAL MONTHLY**, as I must say I always enjoy your articles."

Mrs. Eva S. Maglott, A. M., Professor of Mathematics in the Ohio Normal University, writes us that she is well pleased with the **MONTHLY** and that it is just the kind of a Journal she has been wanting for several years. The Ohio Normal University does thorough work in Mathematics and finds use for such Journals as the **MONTHLY**.

Six numbers of the **AMERICAN MATHEMATICAL MONTHLY** have now been issued, containing over 200 pages, and costing each subscriber \$1.00.